

Pioneer *sound.vision.soul*

External Control Manual
RS-232C Configuration
(for PDP-614MX and PDP-424MV)

Version 1.0

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PDP-614MX External Control Manual

Application

These specifications are applicable to plasma monitors and communications control from external equipment.

Connections

Connections should be made as described below.

plasma monitor

External equipment

e.g.. Personal computer

1) Connector on the plasma monitor side: EXTERNAL CONTROL connector.

Type of connector: D-Sub 9-pin male

No.	Pin Name
1	No Connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection

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2) Connector on the external equipment side: Serial port (RS-232C) connector. See the specifications of the equipment that is to be connected for the type of connector and the pin assignment.

3) Wiring

Use a crossed (reverse) cable.

Wire the cable so that each pair of data lines cross between the two devices. These data line pairs are RXD (Receive data) and TXD (Transmit data), DTR (DTE side ready) and DSR (DCE side ready), and RTS (Ready to send) and CTS (Clear to send).

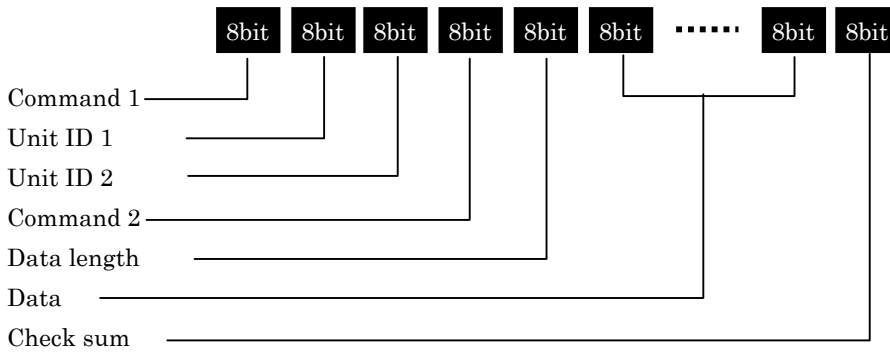
Communication Parameters

(1) Communication system	Asynchronous
(2) Interface	RS-232C
(3) Baud rate*	1200/2400/4800/9600(default)/19200/38400bps
(4) Data length	8 bits
(5) Parity	Non
(6) Stop bit	1 bit
(7) Communication code	Hex
(8) Flow control	Non

* Selectable in the service menu.

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Communication Format



Command 1

Command 1, along with command 2, is a number used to distinguish each command. When making it operate using ID, bit1 and bit0 are set up as follows.

Bit1, Bit0 Unit ID distinction bit

11B	:Usually, a form (with no ID)
10B	:Usually, a form (with no ID)
01B	:Set ID
00B	:Video wall ID

In the case of ACK, when the lower order 4 bits is FH (as in 3FH and 7FH), this indicates that the commands and data of the supported equipment have been received. When the lower order 4 bits is BH (as in 3BH and 7BH), this indicates that unsupported commands and data have been received.

Unit ID1,2 (UA1,UA2)

Unit ID 1 and unit ID 2 are numbers used to identify the equipment that is to be connected. 60H is used for the plasma monitor and 80H is used for external control equipment such as a personal computer.

- 1) Unit ID 1: Indicates the equipment sending the signal. When supporting Set ID by the command 1, 4 bits of low ranks of Set ID are set up.
- 2) Unit ID 2: Indicates the equipment receiving the signal. When supporting Set ID by the command 1, 4 bits of higher ranks of Set ID are set up.

* Set ID : it is the apparatus number assigned to each plasma monitor.

Command 2

Command 2, along with command 1, is a number used to distinguish each command.

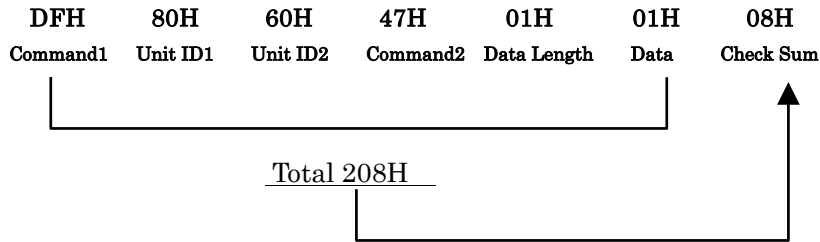
Check Sum (CKS), Error Processing, and ACK

- 1) The check sum described below and RS-232C odd parity are used together for a check of the received data. The check sum is

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the lower order 8 bits of one frame of sent or received data comprising the sum total of Command 1, Unit ID 1 and 2, Command 2, Data Length, and Data.

Check Sum Example



2) Error Processing

- When the communication interval is vacant for more than 4 ms, thereafter a received Command 1 will be recognized. If, at this time, meaningful data cannot be recognized, that data will not be recognized (as valid data).
- An ACK will not be returned unless the receive data error, the check sum error, and the receive data are all taken in.

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The control method of the set by Set ID

When controlling two or more sets of plasma monitors, if the command using Set ID is used, it will become controllable individually.

The example of the POWER ON command to the plasma monitor which set ID as "5" is shown below.

It is not based on ID but is the POWER ON command to all sets.

```
9F 80 60 4E 00 CD
```

In ID= "5", the value of ID-1=4 is set up.

```
9D 84 60 4E 00 CF
```

The example of a change in the single mode of a 4th page multi-system configuration and the multi-mode is shown below.

ID of the set used as a master(etc PC) is set to 50, and it assumes that ID is shaken by AUTO ID to each set. ID shaken at each set is as follows.

Upper left set (master) ID = 50 = 32h

Upper right set ID = 51 = 33h

Lower right set ID = 52 = 34h

Lower left set ID = 53 = 35h

Transmission Data

```
DD 81 63 03 03 03 01 00 CB
```

```
DD 82 63 03 03 03 02 00 CD
```

```
DD 83 63 03 03 03 03 00 CF
```

```
DD 84 63 03 03 03 04 00 D1
```

Transmission of the above command performs a 4th page multi SPLIT display.

Moreover, the following commands are published in order to change a 4th page multi-display into a single mode display.

```
DF 80 60 03 03 01 01 00 C7
```

All sets become a single mode display by the above-mentioned command.

Since this command does not specify Set ID, all sets execute it.

*:Control by ID may not be able to be performed depending on connection with external control apparatus.

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Command Reference List

		CMD1	CMD2	LEN
01	Power ON	9FH	4EH	00H
02	Power OFF	9FH	4FH	00H
03	Input Switch Change	DFH	47H	01H
04	VOLUME Gain Data	DFH	7FH	03H
05	AUDIO Mute ON	9FH	3EH	00H
06	AUDIO Mute OFF	9FH	3FH	00H
07	CONTRAST Gain Data	DFH	7FH	03H
08	BRIGHT Gain Data	DFH	7FH	03H
09	SHARPNESS Gain Data	DFH	7FH	03H
10	Color Gain Data	DFH	7FH	03H
11	TINT Gain Data	DFH	7FH	03H
12	AV SELECTION Select	DFH	0AH	01H
13	COLOR TEMP SELECT	DFH	00H	01H
14	RED Gain Data	DFH	7FH	04H
15	GREEN Gain Data	DFH	7FH	04H
16	BLUE Gain Data	DFH	7FH	04H
17	DNR MODE Set	DFH	C0H	01H
18	BASS Gain Data	DFH	7FH	03H
19	TREBLE Gain Data	DFH	7FH	03H
20	BALANCE Gain Data	DFH	7FH	03H
21	SCREEN SIZE Select	DFH	51H	01H
22	V.POSITION Gain Data	DFH	7FH	03H
23	H.POSITION Gain Data	DFH	7FH	03H
24	V-SIZE Gain Data	DFH	7FH	03H
25	H-SIZE Gain Data	DFH	7FH	03H
26	AUTO PICTURE Select	DFH	7FH	03H
27	PHASE Gain Data	DFH	7FH	03H
28	CLOCK Gain Data	DFH	7FH	03H
29	OSM ADJ. position Data	DFH	1AH	02H
30	POWER MGT Select	DFH	1AH	02H
31	SIDE MASK Set	DFH	C6H	01H
32	PURECINEMA Set	DFH	C1H	01H
33	LONG LIFE Set	DFH	6BH	03H
34	SCREEN WIPER Set	DFH	C8H	04H
35	ALL RESET	1FH	54H	00H
36	Audio Inut Set	DFH	70H	02H
37	BNC INPUT	DFH	8CH	01H
38	RGB Select	DFH	8BH	01H
39	HD Select	DFH	8AH	01H
40	LANGUAGE Select	DFH	5BH	01H
41	COLOR SYSTEM Select	DFH	5CH	01H
42	FREQUENCY Request	1FH	26H	00H
43	Input MODE Request	1FH	41H	00H
44	VIDEO ADJ Request	1FH	45H	00H
45	Audio Select Request	1FH	6FH	00H
46	Failure Mode Request	1FH	3FH	00H
47	MODEL NAME Request	1FH	17H	00H
48	LOW TONE	DFH	0CH	01H
49	C.DETAIL ADJ	DFH	0DH	08H
50	GAMMA Gain Data	DFH	13H	04H
51	Running Sense	1FH	88H	00H
52	OSM OBITER	DFH	5FH	01H
53	Input Skip	5FH	61H	01H
54	SERIAL No. Request	1FH	15H	00H
55	S1/S2 SELECT	DFH	89H	01H
56	SOFT FOCUS	DFH	65H	01H
57	PLUG and PLAY	DFH	8EH	01H
58	BLACK LEVEL (DIGITAL SIGNAL LEVEL)	DFH	8FH	01H
59	OSM CONTRAST	DFH	37H	01H

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29	OSM Select	DFH	58H	01H
35	INVESE Set	DFH	C7H	03H
51	TIMER SWITCH	DFH	02H	01H
54	TIMER PROGRAM SETTING	DFH	30H	08H
55	PRESENT TIME SETTING	DFH	31H	03H
56	MULTI MODE Select	DFH	03H	03H
57	MULTI MODE Request	1FH	3BH	00H
58	AUTO ID SET START	5FH	F0H	01H
59	PLE LINK	DFH	F1H	03H
60	VIDEO WALL SETTING	DFH	F3H	02H
61	POWER DELAY ON (DIVIDER setting : 1/4/9)	DFH	F2H	01H
62	POWER DELAY ON (DIVIDER setting : 16/25)	DFH	F6H	01H
65	ORBITTER SET	DFH	1EH	04H
67	OSM ANGLE	DFH	60H	01H
69*1	PICTURE Size	DFH	2AH	01H
70	OPTION Select	DFH	63H	04H
71	REPEAT Timer	DFH	64H	06H

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01. Power ON

Function

The external control equipment switches on the power of the plasma monitor.

Transmission Data

9FH 80H 60H 4EH 00H CKS

ACK

The plasma monitor returns the following ACK when the power is switched on.

3FH 60H 80H 4EH 00H CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

02. Power OFF

Function

The external control equipment switches off the power of the plasma monitor.

Transmission Data

9FH 80H 60H 4FH 00H CKS

ACK

The plasma monitor returns the following ACK when the power is switched off.

3FH 60H 80H 4FH 00H CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

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03. Input Switch Change

Function

The external control equipment switches the input of the plasma monitor.

Transmission Data

DFH 80H 60H 47H 01H DATA00 CKS

DATA00 : Input Select	01H : Video1
	02H : Video2
	03H : Video3
	05H : COMPNT1
	06H : COMPNT2
	07H : PC1DSUB
	08H : PC2-BNC
	0CH : PC3-DVI

ACK

The plasma monitor returns the following ACK when the input is switched.

3FH 60H 80H 47H 00H CKS

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04. VOLUME Gain Data

Function

The external control equipment changes the VOLUME gain data of the plasma monitor.

Transmission Data

DFH 80H 60H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00: USER SOUND Gain Flag 05H

DATA01: VOLUME Gain Flag 01H

DATA02: VOLUME Gain 00H: Step0

:

0AH: Step10 (Default)

:

2AH: Step42

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00: USER SOUND Gain Flag 05H

DATA01: VOLUME Gain Flag 01H

05. AUDIO Mute ON

Function

The external control equipment switches on AUDIO Mute of the plasma monitor.

Transmission Data

9FH 80H 60H 3EH 00H CKS

ACK

3FH 60H 80H 3EH 00H CKS

06. AUDIO Mute OFF

Function

The external control equipment switches off AUDIO Mute of the plasma monitor.

Transmission Data

9FH 80H 60H 3FH 00H CKS

ACK

3FH 60H 80H 3FH 00H CKS

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07. CONTRAST Gain Data

Function

The external control equipment changes the CONTRAST gain data of the plasma c

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : CONTRAST Gain Flag		07H	
					DATA02 : CONTRAST Gain		CCH : -52	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							14H : +20	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	01H	
					DATA01: CONTRAST Gain Flag		07H

08. BRIGHT Gain Data

Function

The external control equipment changes the BRIGHT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : BRIGHT Gain Flag		08H	
					DATA02 : BRIGHT Gain		E0H : -32	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							20H : +32	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00 : USER PICTURE Gain Flag	01H	
					DATA01 : BRIGHT Gain Flag		08H

09. SHARPNESS Gain Data

Function

The external control equipment changes the SHARPNESS gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : SHARPNESS Gain Flag		06H	
					DATA02 : SHARPNESS Gain		FOH : -16	
							:	
							FFH : -01	
							00H : 0	

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01H : +01

:

10H : +16

Only when a RGB signal is connected

DATA02 : SHARPNESS Gain

01H : 1

02H : 2

03H : 3

04H : 4

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00 : USER PICTURE Gain Flag 01H

DATA01 : SHARPNESS Gain Flag 06H

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10. COLOR Gain Data

Function

The external control equipment changes the COLOR gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : COLOR Gain Flag		04H	
					DATA02 : COLOR Gain		E0H : -32	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							20H : +32	

* COLOR Gain is from -22 (EAH) to +22 (16H) only during video.

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00 : USER PICTURE Gain Flag	01H	
					DATA01 : COLOR Gain Flag		04H

11. TINT Gain Data

Function

The external control equipment changes the TINT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	01H		
					DATA01 : TINT Gain Flag		05H	
					DATA02 : TINT Gain		E0H : -32	
							:	
					* TINT Gain is from -22 (EAH) to		FFH : -01	
					+22 (16H) only during video.		00H : 0	
							01H : +01	
							:	
							20H : +32	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00 : USER PICTURE Gain Flag	01H	
					DATA01 : TINT Gain Flag		05H

12. AV SELECTION Select

Function

The external control equipment sets the av selection of the plasma monitor.

Transmission Data

DFH	80H	60H	0AH	01H	DATA00	CKS
					DATA00: 01H : STD	
					02H : MOVIE1*	
					03H : MOVIE2*	
					04H : Default	
					05H : Dynamic*	

* It cannot choose in the still picture input of a personal computer

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ACK

7FH 60H 80H 0AH 01H DATA00 CKS

DATA00: 01H : STD
02H : MOVIE1
03H : MOVIE2
04H : Default
05H : Dynamic

13. COLOR TEMP SELECT

Function

The external control equipment changes the COLOR TEMP of the plasma monitor.

Transmission Data

DFH 80H 60H 00H 01H DATA00 CKS

DATA00 : 00H: low
01H: middle
02H: high
03H: middle low

ACK

7FH 60H 80H 00H 01H DATA00 CKS

DATA00 : 00H: low
01H: middle
02H: high
03H: middle low

14. RED Gain Data

Function

The external control equipment changes the RED Gain Data of the plasma monitor.

Transmission Data

DFH 80H 60H 7FH 04H DATA00 to DATA03 CKS

DATA00 : USER PICTURE Gain Flag	01H	
DATA01 : RED Gain Flag		01H
DATA02 : RED Low		D8H : -40
		:
		FFH : -01
		00H : 0
		01H : +01
		:
		1EH : +30
DATA03: RED High		D8H : -40
		:
		FFH : -01
		00H : 0
		01H : +01
		:
		1EH : +30

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00 : USER PICTURE Gain Flag 01H
DATA01 : RED Gain Flag 01H

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15. GREEN Gain Data

Function

The external control equipment changes the GREEN Gain Data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS
					DATA00 : USER PICTURE Gain Flag	01H
					DATA01 : GREEN Gain Flag	02H
					DATA02 : GREEN Low	D8H : -40 : FFH : -01 00H : 0 01H : +01 : 1EH : +30
					DATA03 : GREEN High	D8H : -40 : FFH : -01 00H : 0 01H : +01 : 1EH : +30

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	01H	
					DATA01: GREEN Gain Flag		02H

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16. BLUE Gain Data

Function

The external control equipment changes the BLUE Gain Data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS
DATA00	:	USER PICTURE Gain Flag		01H		
DATA01	:	BLUE Gain Flag			03H	
DATA02	:	BLUE Low			D8H :-40	
					:	
					FFH :-01	
					00H : 0	
					01H : +01	
					:	
					1EH : +30	
DATA03	:	BLUE High			D8H :-40	
					:	
					FFH :-01	
					00H : 0	
					01H : +01	
					:	
					1EH : +30	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
DATA00	:	USER PICTURE Gain Flag		01H			
DATA01	:	BLUE Gain Flag				03H	

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17. DNR MODE Set

Function

The external control equipment sets the NR (Noise Reduction) mode of the plasma monitor.

Transmission Data

DFH 80H 60H C0H 01H DATA00 CKS

DATA00: 01H : OFF
02H : LOW
03H : MID
04H : HIGH

ACK

7FH 60H 80H C0H 01H DATA00 CKS

DATA00: 01H : OFF
02H : LOW
03H : MID
04H : HIGH

18. BASS Gain Data

Function

The external control equipment changes the BASS gain data of the plasma monitor.

Transmission Data

DFH 80H 60H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : USER PICTURE Gain Flag 05H
DATA01 : BASS Gain Flag 03H
DATA02 : BASS Gain F3H : -13
:
FFH : -01
00H : 0
01H : +01
:
0DH : +13

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00 : USER PICTURE Gain Flag 05H
DATA01 : BASS Gain Flag 03H

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19. TREBLE Gain Data

Function

The external control equipment changes the TREBLE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	05H		
					DATA01 : TREBLE Gain Flag		04H	
					DATA02 : TREBLE Gain		F3H : -13	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							0DH : +13	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	05H	
					DATA01: TREBLE Gain Flag		04H

20. BALANCE Gain Data

Function

The external control equipment changes the BALANCE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	05H		
					DATA01 : BALANCE Gain Flag		02H	
					DATA02 : BALANCE Gain		EAH : -22	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							16H : +22	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	05H	
					DATA01: BALANCE Gain Flag		02H

1. SCREEN SIZE Select

Function

The external control equipment switches the screen mode of the plasma monitor.

Transmission Data

DFH	80H	60H	51H	01H	DATA00	CKS
					DATA00 02H : WIDE	
					03H : ZOOM	
					04H : STD	
					05H : FULL	
					06H : DOT BY DOT	
					08H : UNDERSCAN	
					09H : 14:9	

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0AH : 2.35:1

ACK

7FH 60H 80H 51H 01H DATA00 CKS

DATA00 02H : WIDE

03H : ZOOM

04H : STD

05H : FULL

06H : DOT BY DOT

08H : UNDERSCAN

09H : 14:9

0AH : 2.35:1

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22. V.POSITION Gain Data

Function

The external control equipment changes the V. POSITION gain data of the plasma monitor.

Transmission Data

DFH 80H 60H 7FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : USER PICTURE Gain Flag 03H
DATA01 : V.POSITION Gain Flag 01H
DATA02 : V.POSITION Gain C0H : -64
 :
 FFH : -01
 00H : 0
 01H : +01
 :
 40H : +64

ACK

7FH 60H 80H 7FH 02H DATA00 DATA01 CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: V.POSITION Gain Flag 01H

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23. H.POSITION Gain Data

Function

The external control equipment changes the H. POSITION gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : H.POSITION Gain Flag		02H	
					DATA02 : H.POSITION Gain		80H : -128	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							7FH : +127	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	03H	
					DATA01: H.POSITION Gain Flag	02H	

24. V.SIZE Gain Data

Function

The external control equipment changes the V.SIZE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : V.SIZE Gain Flag		07H	
					DATA02 : V.SIZE Gain		00H : 0	
							:	
							40H : +64	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	03H	
					DATA01: V.SIZE Gain Flag	07H	

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25. H.SIZE Gain Data

Function

The external control equipment changes the H.SIZE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : H.SIZE Gain Flag		08H	
					DATA02 : H.SIZE Gain		00H : 0	
							:	
							40H : +64	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	03H	
					DATA01: H.SIZE Gain Flag	08H	

26. AUTO PICTURE Select

Function

The external control equipment switches on or off the AUTO PICTURE of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : AUTO PICTURE Select Flag	09H		
					DATA02	00H : ON		
						01H : OFF		

ACK

7FH	60H	80H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : AUTO PICTURE Select Flag	09H		
					DATA02	00H : ON		
						01H : OFF		

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27. PHASE Gain Data

Function

The external control equipment changes the PHASE gain data (Phase) of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : PHASE Gain Flag		03H	
					DATA02 : PHASE Gain		00H : 0	
							:	
							40H : +64 :	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	03H	
					DATA01: PHASE Gain Flag	03H	

28. CLOCK Gain Data

Function

The external control equipment changes the CLOCK gain data (ratio of frequency division) of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS
					DATA00 : USER PICTURE Gain Flag	03H		
					DATA01 : CLOCK Gain Flag		04H	
					DATA02 : CLOCK Gain		C0H : -64	
							:	
							FFH : -01	
							00H : 0	
							01H : +01	
							:	
							40H : +64	

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS
					DATA00: USER PICTURE Gain Flag	03H	
					DATA01: CLOCK Gain Flag	04H	

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29. OSM ADJ. POSITION Data

Function

The external control equipment sets the position of the OSM menu of the plasma monitor.

Transmission Data

DFH	80H	60H	1AH	02H	DATA00	DATA01	CKS
					DATA00 : OSM ADJ. Gain Flag	02H	
					DATA01	01H : 1(TOP LEFT)	
						02H : 2(TOP CENTER)	
						03H : 3(TOP RIGHT)	
						04H : 4(BOTTOM LEFT)	
						05H : 5(BOTTOM CENTER)	
						06H : 6(BOTTOM RIGHT)	

ACK

7FH	60H	80H	1AH	01H	DATA00	CKS
					DATA00 : OSM ADJ. Gain Flag	02H

30. POWER MGT Select

Function

The external control equipment switches on or off the POWER MANAGEMENT of the plasma monitor.

Transmission Data

DFH	80H	60H	1AH	02H	DATA00	DATA01	CKS
					DATA00 : POWER MGT Select	03H	
					DATA01	01H : ON	
						02H : OFF	

ACK

7FH	60H	80H	1AH	02H	DATA00	DATA01	CKS
					DATA00 : POWER MGT Select	03H	
					DATA01	01H : ON	
						02H : OFF	

31. SIDE MASK Set

Function

The external control equipment sets the SIDE MASK of the plasma monitor.

Transmission Data

DFH	80H	60H	C6H	01H	DATA00	CKS
					DATA00 : SIDE MASK	00H : 0
						:
						0FH : 15

ACK

7FH	60H	80H	C6H	01H	DATA00	CKS
					DATA00 : SIDE MASK	00H : 0
						:
						0FH : 15

32. PURECINEMA Set

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33. LONG LIFE Set

Function

The external control equipment sets the PLE, ORBITER, and INVERSE (inverse of image brightness) or WHITE of the plasma monitor.

Transmission Data

DFH 80H 60H 6BH 03H DATA00 DATA01 DATA02 CKS

DATA00 : PLE

01H : AUTO

02H : LOCK1

03H : LOCK2

04H : LOCK3

DATA01 : INVERSE/WHITE

01H : INVERSE

02H : OFF

03H :WHITE

DATA02 : ORBITER

01H : AUTO1

02H : OFF

03H : AUTO2

ACK

The plasma monitor returns the following ACK when setting the PLE, ORBITER, and INVERSE (inverse of image brightness) or WHITE:

3FH 60H 80H 6BH 00H CKS

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34. SCREEN WIPER Set

Function

The external control equipment sets the SCREEN WIPER of the plasma monitor.

Transmission Data

DFH 80H 60H C8H 04H DATA00 to DATA03 CKS

DATA00 : SCREEN WIPER 00H : No operation

 01H : ON

 02H : OFF

DATA01 : 00H : fixed

DATA02 : FFH : fixed

DATA03 : 01H : fixed

ACK

3FH 60H 80H C8H 00H CKS

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35. ALL RESET

Function

The external control equipment resets the user adjustment of the plasma monitor.

Transmission Data

1FH 80H 60H 54H 00H CKS

ACK

3FH 60H 80H 54H 00H CKS

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36. Audio Select Set

Function

The external control equipment sets combinations of audio and video inputs for the plasma monitor.

Transmission Data

DFH 80H 60H 70H 02H DATA00 DATA01 CKS

DATA00 : AUDIO INPUT 01H : AUDIO1
 02H : AUDIO2
 03H : AUDIO3

DATA01 : VISUAL INPUT 01H : VIDEO1
 02H : VIDEO2
 03H : VIDEO3
 05H : COMPNT1
 06H : COMPNT2
 07H : PC1DSUB
 08H : PC2-BNC
 0CH : PC3-DVI

ACK

The plasma monitor returns the following ACK when the input is switched.

3FH 60H 80H 70H 00H CKS

* The plasma monitor returns "Not Available" when selecting the video input same as the one set at one of the AUDIO 1 to 3.

Example:

The plasma monitor returns "Not Available" when selecting the VIDEO1 for AUDIO2 or VIDEO3 after VIDEO1 has been set to AUDIO1.

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37. BNC INPUT

Function

The external control equipment sets the BNC SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8CH 01H DATA00 CKS

DATA00 : BNC SELECT 01H : RGB
 02H : Component

ACK

The plasma monitor returns the following ACK when setting the BNC SELECT:

7FH 60H 80H 8CH 01H DATA00 CKS

DATA00 : BNC SELECT 01H : RGB
 02H : Component

38. RGB Select

Function

The external control equipment sets the RGB SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8BH 01H DATA00 CKS

DATA00 01H : AUTO
 02H : STILL
 03H : MOTION
 04H : WIDE1
 05H : WIDE2
 06H : DTV
 07H : WIDE3
 08H : WIDE4

ACK

7FH 60H 80H 8BH 01H DATA00 CKS

DATA00 01H : AUTO
 02H : STILL
 03H : MOTION
 04H : WIDE1
 05H : WIDE2
 06H : DTV
 07H : WIDE3
 08H : WIDE4

39. HD Select

Function

The external control equipment sets the HD SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 8AH 01H DATA00 CKS

DATA00 01H : 1035I
 02H : 1080A
 03H : 1080B

ACK

7FH 60H 80H 8AH 01H DATA00 CKS

DATA00 01H : 1035I
 02H : 1080A
 03H : 1080B

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40. LANGUAGE Select

Function

The external control equipment sets the LANGUAGE SELECT of the plasma monitor.

Transmission Data

DFH 80H 60H 5BH 01H DATA00 CKS

DATA00: 01H : ENGLISH
02H : GERMAN
03H : FRENCH
04H : SPANISH
05H : ITALIAN
06H : SWEDISH
07H : JAPANESE
0AH : CHINESE

ACK

7FH 60H 80H 5BH 01H DATA00 CKS

DATA00: 01H : ENGLISH
02H : GERMAN
03H : FRENCH
04H : SPANISH
05H : ITALIAN
06H : SWEDISH
07H : JAPANESE
0AH : CHINESE

41. COLOR SYSTEM Select

Function

The external control equipment sets the COLOR SYSTEM of the plasma monitor.

Transmission Data

DFH 80H 60H 5CH 01H DATA00 CKS

DATA00: 01H : 3.58NTSC
02H : 4.43NTSC
03H : PAL
04H : SECAM
0AH : AUTO
0BH : PAL60
0DH : PAL-M
0EH : PAL-N

ACK

7FH 60H 80H 5CH 01H DATA00 CKS

DATA00: 01H : 3.58NTSC
02H : 4.43NTSC
03H : PAL
04H : SECAM
0AH : AUTO
0BH : PAL60
0DH : PAL-M
0EH : PAL-N

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42. FREQUENCY Request(SIGNAL INFORMATION)

Function

The external control equipment inquires the Horizontal frequency, Vertical frequency, Horizontal sync polarity, Vertical sync polarity, Mode, and Resolution of the plasma monitor.

Transmission Data

1FH 80H 60H 26H 00H CKS

ACK

7FH 60H 80H 26H 0BH DATA00 to DATA0A CKS

Horizontal frequency

DATA00: Integer part 00H: 0 (No signal: 00H)

:

FFH : 255

DATA01: One decimal place 00H: 0 (No signal: 00H)

:

09H : 9

Vertical frequency

DATA02: Integer part 00H: 0 (No signal: 00H)

:

FFH : 255

DATA03: One decimal place 00H: 0 (No signal: 00H)

:

09H : 9

Horizontal sync polarity

DATA04 00H : -

01H : Positive

02H : Negative

Vertical sync polarity

DATA05 00H : -

01H : Positive

02H : Negative

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MODE

DATA06	00H	: No signal	—
	01H to 80H	: RGB signal	Identification number of PC mode
	81H	: Video signal	3.58NTSC
	82H	:	4.43NTSC
	83H	:	PAL
	84H	:	PAL-M
	85H	:	PAL-N
	86H	:	PAL60
	87H	:	SECAM
	88H	:	B/W60
	89H	:	B/W50
	A0H	: HD/DVD/DTV signal	480I
	A1H	:	480P
	A2H	:	576I
	A3H	:	576P
	A4H	:	720P
	A5H	:	1035I
	A6H	:	1080I

RESOLUTION

DATA07: Dots (Low-order byte) 00H: 0 (No signal: 00H)
:
FFH 255

DATA08: Dots (High-order byte) 00H: 257 (No signal: 00H)
:
FFH

DATA09: Lines (Low-order byte) 00H: 0 (No signal: 00H)
:
FFH 255

DATA10: Lines (High-order byte) 00H: 257 (No signal: 00H)
:
FFH

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43. Input MODE Request

Function

The display returns the current input information by the external control equipment's request.

Transmission Data

1FH 80H 60H 41H 00H CKS

ACK

7FH 60H 80H 41H 01H DATA00 CKS

DATA00 : Input Select	01H : Video
	02H : Video2
	03H : Video3
	04H : COMPNT1
	05H : PC1DSUB
	06H : PC2-BNC
	0CH : COMPNT2
	0EH : PC3-DVI

44. VIDEO ADJ. Request

Function

The display returns the video adjustments information by the external control equipment's request.

Transmission Data

1FH 80H 60H 45H 00H CKS

ACK

7FH 60H 80H 45H 0CH DATA00 to DATA0B CKS

DATA00: RED Gain (Low)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30

DATA01: GREEN Gain (Low)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30

DATA02: BLUE Gain (Low)	D8H : -40
	:
	FFH : -01
	00H : 0
	01H : +01
	:
	1EH : +30

DATA03: COLOR Gain	E0H : -32
	:
* COLOR Gain is from -22 (EAH) to +22 (16H) only during video.	FFH : -01
	00H : 0
	01H : +01
	:
	20H : +32

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DATA04: TINT Gain	E0H : -32 : FFH : -01 00H : 0 01H : +01 : 20H : +32
* TINT Gain is from -22 (EAH) to +22 (16H) only during video.	
DATA05: SHARPNESS Gain	F0H : -16 : FFH : -01 00H : 0 01H : +01 : 10H : +16
DATA06: CONTRAST Gain	CCH : -52 : FFH : -01 00H : 0 01H : +01 : 14H : +20
DATA07: BRIGHT Gain	E0H : -32 : FFH : -01 00H : 0 01H : +01 : 20H : +32
DATA08: RED Gain (High)	D8H : -40 : FFH : -01 00H : 0 01H : +01 : 1EH : +30
DATA09: GREEN Gain (High)	D8H : -40 : FFH : -01 00H : 0 01H : +01 : 1EH : +30
DATA0A: BLUE Gain (High)	D8H : -40 : FFH : -01 00H : 0

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01H : +01
:
1EH : +30

DATA0B: COLOR TEMP SELECT 00H: low
 01H: middle
 02H: high
 03H: middle low

45. Audio Select Request

Function

The external control equipment inquires the current combinations of audio and video inputs for the plasma monitor.

Transmission Data

1FH 80H 60H 6FH 00H CKS

ACK

The plasma monitor returns the following ACK:

7FH 60H 80H 6FH 03H DATA00 DATA01 DATA02 CKS

DATA00 : AUDIO1

 01H-0CH : VISUAL INPUT DATA

DATA01 : AUDIO2

 01H-0CH : VISUAL INPUT DATA

DATA02 : AUDIO3

 01H-0CH : VISUAL INPUT DATA

<VISUAL INPUT DATA>

 01H : VIDEO1

 02H : VIDEO2

 03H : VIDEO3

 05H : COMPNT1

 06H : COMPNT2

 07H : PC1DSUB

 08H : PC2-BNC

 0CH : PC3-DVI

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46. Failure Mode Request

Function

The external control equipment inquires the detection of failures of the plasma monitor.

Transmission Data

1FH 80H 60H 3FH 00H CKS

ACK

The plasma monitor returns the following ACK:

7FH 60H 80H 3FH 02H DATA00 DATA01 CKS

DATA00: FAILURE MODE 1

Bit 0 : PDP MODULE

0: Abnormal

1: Normal

Bit 1 : 1: fixed (backup)

Bit 2 : TEMPERATURE

0: Abnormal

1: Normal

Bit 3 : FAN

0: Abnormal

1: Normal

Bit 4 : TEMPERATURE SENSOR

0: Abnormal

1: Normal

Bit 5 : 1: fixed (backup)

Bit 6 : 1: fixed (backup)

Bit 7 : 1: fixed (backup)

DATA01: FAILURE MODE 2

Bit 0-7 : 1: fixed (backup)

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47. MODEL NAME Request

Function

The external control equipment inquires the product code of the plasma monitor.

Transmission Data

1FH 80H 60H 17H 00H CKS

ACK

The plasma monitor returns the following ACK:

7FH 60H 80H 17H 0CH DATA00 to DATA11 CKS

DATA00 : 1st character of the product code

DATA01 : 2nd character of the product code

:

DATA11 : 12th character of the product code

Received data	00H-09H	: 0-9
	80H	: - (Hyphen)
	81H	: +
	82H	: ×
	83H	: /
	84H	: (
	85H	:)
	86H	: .
	87H	: ‘
	96H	: Blank

10H-29H : A-Z

Corresponding character	A	B	C	D	E	F	G	H	I	J
Received data (H)	10	11	12	13	14	15	16	17	18	19

Corresponding character	K	L	M	N	O	P	Q	R	S	T
Received data (H)	1A	1B	1C	1D	1E	1F	20	21	22	23

Corresponding character	U	V	W	X	Y	Z
Received data (H)	24	25	26	27	28	29

If there are fewer than 12 characters in the product code, product code would be padded right with blanks.

Example: If the product code of your plasma monitor is “50XGA”, the returned codes would be as follows.

DATA00:05H, DATA01:00H, DATA02:27H, DATA03:16H, DATA04:10H, DATA05:96H, DATA06:96H, DATA07:96H,
DATA08:96H, DATA09:96H, DATA10:96H, DATA11:96H

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48.LOW TONE

Function

The external control equipment sets the dithering processing or error diffusion processing of the plasma monitor.

Transmission Data

DFH 80H 60H 0CH 01H DATA00 CKS

DATA00: 00H:AUTO
01H: dithering processing(for motion picture)
02H: dithering processing (for still picture)
03H: error diffusion processing

ACK

7FH 60H 80H 0CH 01H DATA00 CKS

DATA00: 00H:AUTO
01H: dithering processing
02H: dithering processing
03H: error diffusion processing

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49. C.DETAIL ADJ

Function

External control equipment can adjust RGB each color which a plasma monitor wants to emphasize.

Transmission Data

DFH	80H	60H	0DH	07H	DATA00 to DATA06	CKS
DATA00:RED			00H		-32	
			:			
			20H		0	
			:			
			40H		+32	
DATA01:GREEN			00H		-32	
			:			
			20H		0	
			:			
			40H		+32	
DATA02:BLUE			00H		-32	
			:			
			20H		0	
			:			
			40H		+32	
DATA03:YELLOW			00H		-32	
			:			
			20H		0	
			:			
			40H		+32	
DATA04:MAZENTA			00H		-32	
			:			
			20H		0	
			:			
			40H		+32	
DATA05:CYAN			00H		-32	
			:			
			20H		0	
			:			
			40H		+32	
DATA06:RESET			00H		OFF	
			01H		ON	

ACK

7FH 60H 80H 0DH 00H CKS

50.GAMMA GAIN Data

Function

External control apparatus changes Gamma of a plasma monitor.

Transmission Data

DFH	80H	60H	13H	02H	DATA00	DATA01	CKS
DATA00:	GAMMA	FLAG			01H		Gamma change
DATA01:	GAMMA				00H		:1(GAMMA2.1)
					01H		:2(GAMMA2.2)
					02H		:3(GAMMA2.3)
					03H		:4(GAMMA2.4)

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ACK

7FH 60H 80H 13H 01H DATA00 CKS

DATA00: GAMMA FLAG 01H : Gamma change

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51. Running Sense

Function

External control apparatus grasps the power supply state of a plasma monitor.

A plasma monitor is made to recognize connection of PC CONTROL.

Transmission Data

1FH 80H 60H 88H 00H CKS

ACK

7FH 60H 80H 88H 01H DATA CKS

DATA: Bit0: Connect Condition

0: No connection

1: Connected

Bit1 0: Fixed

1:-

Bit2: Power Status

0: POWER ON

1: POWER OFF(STANBY)

Bit3 0: Fixed

Bit4 0: Fixed

Bit5 0: Fixed

Bit6 0: Fixed

Bit7 0: Fixed

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52. OSM OBITER

Function

In order to decrease printing of a screen by OSM display, whenever it displays OSM, shift operation of the OSM is carried out.

Transmission Data

DFH	80H	60H	5FH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00	01H	: OBITER ON
	02H	: OBITER OFF

ACK

7FH	60H	80H	5FH	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00	01H	: OBITER ON
	02H	: OBITER OFF

53. Input Skip

Function

In a monitor's key "an input change", when there is no signal, it flies and shifts to the following channel.

Transmission Data

DFH	80H	60H	61H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00	01H	: ON
	02H	: OFF

ACK

7FH	60H	80H	61H	01H	DATA00	CKS
-----	-----	-----	-----	-----	--------	-----

DATA00	01H	: ON
	02H	: OFF

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54. SERIAL No. Request

Function

External control apparatus read the serial number of the set recorded by EEPROM of a plasma display.

Transmission Data

1FH 80H 60H 15H 00H CKS

ACK

7FH 60H 80H 15H 0CH DATA00 to DATA11 CKS

Even DATA00-DATA11 is set up as follows.

Setting value	00H-09H	:	0 - 9
	96H	:	Blank
	10H-29H	:	A-Z of Alphabet

55.S1/S2 SELECT

Function

External control apparatus sets up the S1/S2 detection of a plasma monitor.

Transmission Data

DFH 80H 60H 89H 01H DATA00 CKS

DATA00 01H : AUTO

02H : OFF

ACK

7FH 60H 80H 89H 01H DATA00 CKS

DATA00 01H : AUTO

02H : OFF

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56.SOFT FOCUS

Function

External control apparatus sets up the Soft Focus of a plasma monitor.

Transmission Data

DFH 80H 60H 65H 01H DATA00 CKS

DATA00 01H : OFF
02H : LEVEL1
03H : LEVEL2
04H : LEVEL3
05H : LEVEL4

ACK

7FH 60H 80H 65H 01H DATA00 CKS

DATA00 01H : OFF
02H : LEVEL1
03H : LEVEL2
04H : LEVEL3
05H : LEVEL4

57.PLUG and PLAY

Function

External control apparatus sets up the Plug and Play of a plasma monitor.

Transmission Data

DFH 80H 60H 8EH 01H DATA00 CKS

DATA00 01H : PC
02H : STB/DVD(HDCP signal)

ACK

7FH 60H 80H 8EH 01H DATA00 CKS

DATA00 01H : PC
02H : STB/DVD(HDCP signal)

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58. BLACK LEVEL SELECT

Function

External control apparatus sets up the black level (digital signal level) of a plasma monitor.

Transmission Data

DFH 80H 60H 8FH 01H DATA00 CKS
 DATA00 01H : LOW
 02H : HIGH

ACK

7FH 60H 80H 8FH 01H DATA00 CKS
 DATA00 01H : LOW
 02H : HIGH

59. OSM CONTRAST SELECT

Function

External control apparatus selects the OSM contrast function of a plasma monitor.

Transmission Data

DFH 80H 60H 37H 01H DATA00 CKS
 DATA00 01H : NORMAL
 02H : LOW

ACK

7FH 60H 80H 37H 01H DATA00 CKS
 DATA00 01H : NORMAL
 02H : LOW

.60. OSM Select

Function

The external control equipment switches on or off the on-screen menu (OSM) of the plasma monitor.

Transmission Data

DFH 80H 60H 58H 01H DATA00 CKS
 DATA00: 01H: On-Screen menu On
 02H: On-Screen menu Off

ACK

7FH 60H 80H 58H 01H DATA00 CKS
 DATA00: 01H: On-Screen menu On
 02H: On-Screen menu Off

*Operation is as described in the table below.

Operation	On-Screen Menu (OSM)			
	Display of items and adjustments on the menu		Volume display, input display, and screen size display	
	When screen menu is ON	When screen menu is OFF	When screen menu is ON	When screen menu is OFF

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Remote control operation	Yes	Yes	Yes	No
Personal computer control operation	No	No	Yes	No

61. INVERSE Set

Function

The external control equipment sets the INVERSE (inverse of image brightness) and the WHITE of the plasma

Transmission Data

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DFH 80H 60H C7H 03H DATA00 DATA01 DATA02 CKS

DATA00: INVERSE/WHITE	00H : No operation 01H : ON (INVERSE) 02H : OFF 03H : WHITE
DATA01 : WORKING TIME	00H : ON 01H: 03M (minutes) 02H: 06M (minutes) : FFH: 12H (hours) and 45M (minutes)
DATA02 : WAITING TIME	01H: 03M (minutes) 02H: 06M (minutes) : FFH: 12H (hours) and 45M (minutes)

ACK

3FH 60H 80H C7H 00H CKS

NOTE: The WORKING TIME and the WAITING TIME can be set in units of 3 minutes.

Example: 03H=9 minutes

1EH=1 hour and 30 minutes

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62. TIMER SWITCH

Function

The external control equipment sets the timer reservation of the plasma monitor.

Transmission Data

DFH 80H 60H 02H 01H DATA00 CKS

DATA00: 00H : Reservation OFF

01H : Reservation ON

ACK

7FH 60H 80H 02H 01H DATA00 CKS

DATA00: 00H : Reservation OFF

01H : Reservation ON

63. TIMER PROGRAM SETTING

Function

External control apparatus sets up the timer program of a plasma monitor.

Transmission Data

DFH 80H 60H 30H 08H DATA00 to DATA07 CKS

DATA00 PROGRAM No

01H~07H :No1~No7

DATA01 DATE

01H~07H : Sunday - Saturday

08H : Every day

09H~0FH : Every week Sunday - every week Saturday

FFH : - (with No Setup)

DATA02 ON time (HOUR)

00H~09H :00~09

10H~19H :10~19

20H~23H :20~23

FFH : - (with No Setup)

DATA03 ON time (MIN)

00H~09H :00~09

10H~19H :10~19

20H~29H :20~29

30H~39H :30~39

40H~49H :40~49

50H~59H :50~59

FFH : - (with No Setup)

DATA04 OFF time (HOUR)

00H~09H :00~09

10H~19H :10~19

20H~23H :20~23

FFH : - (with No Setup)

DATA05 OFF time(MIN)

00H~09H :00~09

10H~19H :10~19

20H~29H :20~29

30H~39H :30~39

40H~49H :40~49

50H~59H :50~59

FFH : - (with No Setup)

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DATA06 INPUT

01H : Video1
02H : Video2
03H : Video3
04H : COMPNT1
05H : COMPNT2
06H : PC1DSUB
07H : PC2-BNC
08H : PC3-DVI
FFH : - (with No Setup)

DATA07 MODE

01H : OBIT
02H : INV
03H : WT
04H : WIPER
FFH : - (with No Setup)

ACK

7FH 60H 80H 30H 00H CKS

64. PRESENT TIME SETTING

Function

External control apparatus sets up the present time of a plasma monitor.

Transmission Data

DFH 80H 60H 31H 03H DATA00 to DATA02 CKS

DATA00 Day of the week 01H-07H : 1-7 (Sunday - Saturday)

DATA01 HOUR	00H-09H:00-09
	10H~19H:10~19
	20H~23H:20~23
DATA02 minutes	00H-09H:00-09
	10H~19H:10~19
	20H~29H:20~29
	30H~39H:30~39
	40H~49H:40~49
	50H~59H:50~59

ACK

7FH 60H 80H 31H 00H CKS

65. MULTI MODE Select

Function

External control apparatus changes MULTI MODE of a plasma monitor.

Transmission Data

DFH 80H 60H 03H 03H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

01H : Single mode
02H : Multi mode 1 screens
03H : Multi mode 4 screens
04H : Multi mode 9 screens
05H : Multi mode 16 screens
06H : Multi mode 25 screens

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DATA01 (POSITION OF DIVIDE)

- 01H : Upper left selected (4 screens)
- 02H : Upper right selected (4 screens)
- 03H : Lower right selected (4 screens)
- 04H : Lower left selected (4 screens)
- 07H : Top left selected (9 screens)
- 08H : Top middle selected (9 screens)
- 09H : Top right selected (9 screens)
- 0AH : Middle left selected (9 screens)
- 0BH : Middle centerselected (9 screens)
- 0CH : Middle rightselected (9 screens)
- 0DH : Bottom leftselected (9 screens)
- 0EH : Bottom middle selected (9 screens)
- 0FH : Bottom right selected (9 screens)

- 10H : position1(16 screens,refer to figure1)
- 11H : position2(16 screens,refer to figure1)
- :
- 18H : position9(16 screens,refer to figure1)
- 19H : position10(16 screens,refer to figure1)
- :
- 1FH : position16 (16 screens,refer to figure1)

- 20H : position1(25 screens,refer to figure2)
- 21H : position2(25 screens,refer to figure2)
- :
- 29H : position10(25 screens,refer to figure2)
- 2AH : position11(25 screens,refer to figure2)
- :
- 32H : position19(25 screens,refer to figure2)
- 33H : position20(25 screens,refer to figure2)
- :
- 38H : position25(25 screens,refer to figure2)

1	2	3	4
6	7	8	9
11	12	13	14
16	17	18	19

Figure1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Figure2

DATA02 (DISP MODE)

- 00H : SPLIT
- 01H : BRANKING

ACK

7FH 60H 80H 03H 03H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

- 01H : Single mode
- 02H : Multi mode 1 screens
- 03H : Multi mode 4 screens
- 04H : Multi mode 9 screens

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05H : Multi mode 16 screens

06H : Multi mode 25 screens

DATA01 (POSITION OF DIVIDE)

- 01H : Upper left selected (4 screens)
- 02H : Upper right selected (4 screens)
- 03H : Lower right selected (4 screens)
- 04H : Lower left selected (4 screens)
- 07H : Top left selected (9 screens)
- 08H : Top middle selected (9 screens)
- 09H : Top right selected (9 screens)
- 0AH : Middle left selected (9 screens)
- 0BH : Middle centerslected (9 screens)
- 0CH : Middle rightselected (9 screens)
- 0DH : Bottom leftselected (9 screens)
- 0EH : Bottom middle selected (9 screens)
- 0FH : Bottom right selected (9 screens)
- 10H : position1(16 screens,refer to figure1)
- 11H : position2(16 screens,refer to figure1)
- :
- 18H : position9(16 screens,refer to figure1)
- 19H : position10(16 screens,refer to figure1)
- :
- 1FH : position16 (16 screens,refer to figure1)

- 20H : position1(25 screens,refer to figure2)
- 21H : position2(25 screens,refer to figure2)
- :
- 29H : position10(25 screens,refer to figure2)
- 2AH : position11(25 screens,refer to figure2)
- :
- 32H : position19(25 screens,refer to figure2)
- 33H : position20(25 screens,refer to figure2)
- :
- 38H : position25(25 screens,refer to figure2)

1	2	3	4
6	7	8	9
11	12	13	14
16	17	18	19

Figure1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Figure2

DATA02 (DISP MODE)

00H : SPLIT

01H : BRANKING

66. MULTI MODE Request

Function

External control apparatus can know the MULTI MODE information on a plasma monitor.

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Transmission Data

1FH 80H 60H 3BH 00H CKS

ACK

7FH 80H 60H 3BH 02H DATA00 DATA01 DATA02 CKS

DATA00 (SCREEN DIVIDER SETTING)

- 01H : Single mode
- 02H : Multi mode 1 screens
- 03H : Multi mode 4 screens
- 04H : Multi mode 9 screens
- 05H : Multi mode 16 screens
- 06H : Multi mode 25 screens

DATA01 (POSITION OF DIVIDE)

- 01H : Upper left selected (4 screens)
- 02H : Upper right selected (4 screens)
- 03H : Lower right selected (4 screens)
- 04H : Lower left selected (4 screens)
- 07H : Top left selected (9 screens)
- 08H : Top middle selected (9 screens)
- 09H : Top right selected (9 screens)
- 0AH : Middle left selected (9 screens)
- 0BH : Middle centerselected (9 screens)
- 0CH : Middle rightselected (9 screens)
- 0DH : Bottom leftselected (9 screens)
- 0EH : Bottom middle selected (9 screens)
- 0FH : Bottom right selected (9 screens)

- 10H : position1(16 screens, refer to figure1)
- 11H : position2(16 screens, refer to figure1)
- :
- 18H : position9(16 screens, refer to figure1)
- 19H : position10(16 screens, refer to figure1)
- :
- 1FH : position16 (16 screens, refer to figure1)

- 20H : position1(25 screens, refer to figure2)
- 21H : position2(25 screens, refer to figure2)
- :
- 29H : position10(25 screens, refer to figure2)
- 2AH : position11(25 screens, refer to figure2)
- :
- 32H : position19(25 screens, refer to figure2)
- 33H : position20(25 screens, refer to figure2)
- :
- 38H : position25(25 screens, refer to figure2)

1	2	3	4
6	7	8	9
11	12	13	14
16	17	18	19

Figure1

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Figure2

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DATA02 (DISP MODE)

00H : SPLIT

01H : BRANKING

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67. AUTO ID SET START

Function

External control apparatus sets up ID automatically to two or more plasma monitors.

Transmission Data

5FH 80H 60H F0H 01H DATA00 CKS

DATA00 00H~FFH: ID of a master*1 is set up.

*: When you use it by the multi-system, please remove the link input of a master*1.

*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

68. PLE LINK

Function

External control apparatus sets up equally PLE between two or more plasma monitors.

Transmission Data

DFH 80H 60H F1H 03H DATA00 to DATA02 CKS

DATA00 00H:PLE LINK ON

01H:PLE LINK OFF

DATA01 FFH(fixed)

DATA02 FFH(fixed)

*:Turn on the AUTO ID and set the DIVIDER(at 1,4 or 9), before this operation

69. VIDEO WALL SETTING

Function

External control apparatus sets 4screens or 9screens as a video wall.

Transmission Data

DFH 80H 60H F3H 03H DATA00 DATA01 DATA02 CKS

DATA00: 01H:1 screen

(Matrix display function does not work.)

04H:4 screens (2*2 video wall)

09H:9 screens (3*3 video wall)

DATA 01: 00H(fixed)

DATA 02: 01H : Video1

02H : Video2

03H : Video3

04H : COMPNT1

05H : COMPNT2

06H : COMPNT3

07H : PC1DSUB

08H : PC2-BNC

09H : PC3-DVI

*:Turn on the AUTO ID, before this operation

*: This command is used to following system.

1. The system configuration is video wall system (4screens or 9screens).

Then please connect each PDP by wired cable.

In the case of 16 screens or 25 screens video wall system, please refer to No.65."MULTI MODE Select".

2. The ID number from a master display is set the continuous number.

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70. POWER DELAY ON(at 4 or 9 multiscreen)

Function

External control apparatus attaches a time lag to two or more plasma monitors, and turns on a power supply.

Transmission Data

DFH 80H 60H F2H 01H DATA00 CKS

DATA00: 00H-FFH: Delay time (second)

*:Turn on the AUTO ID and set the DIVIDER(at 4 or 9), before this operation

*: This command is premised on two or more plasma monitor system composition being multi-systems. In command issue of master¹ OSD operation, the value of DATA00 is 01H (1 second). This command does not have ACK for one-way traffic.

*1: "Master" means the 1st set of PDP at the time of cable connection at the time of AUTO ID execution.

71. POWER DELAY ON (at 16 or 25 multi screens)

Function

External control apparatus attaches a time lag to 10 or more plasma monitors, and turns on a power supply.

Transmission Data

DFH 80H 60H F6H 01H DATA00 CKS

DATA00: 01H mode1

02H mode2

ACK

7FH 60H 80H F6H 01H DATA00 CKS

DATA00: 01H mode1

02H mode2

NOTE: When multi mode is 16 or 25, this function is available.

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72. ORBITER SET

Function

A picture shift function is set up.

Transmission Data

DFH 80H 60H 1EH 04H DATA00 to DATA03 CKS

DATA00: Mode 00H : OFF

 01H : Auto 1

 02H : Auto 2

 03H : Manual

DATA01: The horizontal amount of movements

1 dot : 01H

to :-

20 dot : 14H

DATA02: The vertical amount of movements

One line : 01H

to :-

20 line : 14H

DATA03: Interval of operation 1 - 5 minutes : 01H - 05H

ACK

7FH 60H 80H 1EH 01H DATA00 CKS

DATA00: Mode 00H : OFF

 01H : Auto 1

 02H : Auto 2

 03H : Manual

* DATA01-03

Auto1,2 setting : 01H fixed

Manual setting : Please set DATA 01-03.

73. OSM ANGLE

Function

The vertical display of OSM and a horizontal display are chosen.

Transmission Data

DFH 80H 60H 60H 01H DATA00 CKS

DATA00 01H : Horizontal display

 02H : Vertical display

ACK

7FH 60H 80H 60H 01H DATA00 CKS

DATA00 01H : Horizontal display

 02H : Vertical display

74. PICTURE Size

Function

Screen mode selection.

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Transmission Data

DFH 80H 60H 2AH 01H DATA00 CKS

DATA00 01H : ON
02H : OFF

ACK

7FH 60H 80H 2AH 01H DATA00 CKS

DATA00 01H : ON
02H : OFF

75. OPTION Select

Function

Power-on mode, a control lock, and IR remote are set up.

Transmission Data

DFH 80H 60H 63H 04H DATA00 to DATA03 CKS

DATA00 : Power ON mode	00H : LAST 01H : Video1 02H : Video2 03H : Video3 05H : COMPNT1 06H : COMPNT2 07H : PC1DSUB 08H : PC2-BNC 0CH : PC3-DVI
DATA01 : Control Lock	00H : OFF 01H : ON
DATA02 : IR remote	00H : OFF 01H : ON
DATA03 : Loop Out	00H : OFF 01H : ON

ACK

7FH 60H 80H 63H 00H CKS

76. REPEAT Timer

Function

External control apparatus sets up the repeat timer of a plasma monitor.

Transmission Data

DFH 80H 60H 64H 07H DATA00 to DATA06 CKS

DATA00	00H : REPEAT Timer OFF 01H : REPEAT Timer ON
DATA01 PROGRAM 1	01H : DIVIDER 1 02H : DIVIDER 4 03H : DIVIDER 9
DATA02 SOURCE	01H : Video1 02H : Video2 03H : Video3 05H : COMPNT1 06H : COMPNT2 07H : PC1DSUB 08H : PC2-BNC

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0CH : PC3-DVI

DATA03 WORK TIME

01 H·FFH:1 - 255 minutes (1 minute - 4 hours and 15 minutes)

DATA04 PROGRAM 1

01H :DIVIDER 1

02H :DIVIDER 4

03H :DIVIDER 9

DATA05 SOURCE 01H :Video1

02H :Video2

03H :Video3

05H : COMPNT1

06H : COMPNT2

07H : PC1DSUB

08H : PC2-BNC

0CH : PC3-DVI

DATA06 WORK TIME

01 H·FFH:1 - 255 minutes (1 minute - 4 hours and 15 minutes)

ACK

7FH 60H 80H 64H 00H CKS

*:Turn on the AUTO ID, before this operation



External Control Manual
RS-232C Configuration
(for PDP-614MX and PDP-424MV)

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